

Need/Opportunity Identification Document (NID)

1. Title:

The Climate Prediction Center (CPC) is asking Meteorological Development Laboratory (MDL) to extend daily Model Output Statistics (MOS) temperature and precipitation guidance out to 14 days.

2. Source of Need:

Extending daily MOS guidance can help to improve skill of the week 2 temperature and precipitation forecasts. These forecasts have found uses in the energy, agriculture, construction and commodities trading sectors for planning and resource allocation.

3. Need Focal Point:

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5. Description:

The Climate Prediction Center makes operational probabilistic forecasts of temperature and prediction for tercile categories for 6-10 and 8-14 (week 2) day periods. These products focus on mean or extreme conditions within either a 5 or 7 day period. The average Heidke skill scores for these forecasts are low, but better than random chance or climatology forecasts.

To extend the predictability of numerical models past the range of useful skill for daily forecasts, currently, CPC uses daily MOS guidance from the GFS ensembles as a tool for preparing operational 6-10-day surface temperature outlooks. This has become one of CPC's best-scoring extended-range forecast tools.

Currently, MOS temperature guidance ends with day 10. CPC has very few tools that provide skillful forecasts of temperature for the week 2 period and believes that MOS guidance for this time frame would be quite helpful in improving forecast skill for operational week 2 forecasts.

A new precipitation product based on MOS guidance for both the 6-10 and 8-14 day periods is also needed. Currently, categorical quantitative precipitation forecasts (QPF) only go out to 156 hours (6.5 days) for the 12h QPF and the probability of precipitation (PoP) only extends out to 192 hours (day 8). The MOS precipitation (either categorical QPF or PoP) guidance, extended through day 14 (for the week two forecast), would frequently provide useful input to forecasts.

6. Primary Functional Area Providing the Need:

This is a science area need. CPC requests that MDL provides the support.